

REMARKS

Upon entry of the present amendment, claims 1-2 and 6-10 will remain pending in the above-identified application and stand ready for further action on the merits.

Claim 1 has been amended to clarify in the preamble of the claim that the invention pertains to “...*a polyester resin aqueous dispersion comprising....*” Claim 1’s amended preamble agrees with the preambles of remaining claims 2 and 6-10. Claim 1 has also been amended to recite that “...*the polyester resin aqueous dispersion is prepared by phase-inversion emulsification....*” This latter recitation in claim 1 finds support throughout the original specification (*e.g.*, see pages 4-5 of the instant specification).

Accordingly, the present amendment to claim 1 does not introduce new matter into the application as originally filed. As such, entry of the instant amendment and favorable action on the merits is earnestly solicited at present.

Claim Rejections – 35 USC § 102(b) and § 103(a)

Claims 1-2 and 6-10 stand rejected under 35 USC § 102(b) as anticipated by or, in the alternative, under 35 USC § 103(a) as obvious over **Kajimaru et al. US ‘959** (US 2002/0061959 - *now* US Patent 6,818,699).

Claims 1-2 and 6-10 stand rejected under 35 USC § 102(b) as being anticipated by **Uno et al. EP ‘122** (EP 1 202 122).

Reconsideration and withdraw of each of the above rejections is respectfully requested based on the following arguments and considerations.

Legal Standard for Determining Anticipation

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.” *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) “The identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Legal Standard for Determining Prima Facie Obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Supreme Court of the United States has recently held that the teaching, suggestion, motivation test is a valid test for obviousness, but one which cannot be too rigidly applied. See *KSR Int'l Co. v. Teleflex Inc.*, 127 SCt 1727, 82 USPQ2d 1385 (U.S. 2007). The Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, *ibid.*, reaffirmed the Graham factors in the determination of obviousness under 35 U.S.C. § 103(a). The four factual inquiries under Graham are:

- (a) determining the scope and contents of the prior art;
- (b) ascertaining the differences between the prior art and the claims in issue;
- (c) resolving the level of ordinary skill in the pertinent art; and
- (d) evaluating evidence of secondary consideration.

Graham v. John Deere, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (U.S. 1966).

The Court in *KSR Int'l Co. v. Teleflex, Inc.*, *supra.*, did not totally reject the use of "teaching, suggestion, or motivation" as a factor in the obviousness analysis. Rather, the Court recognized that a showing of "teaching, suggestion, or motivation" to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a).

Even so, the Court in *KSR Int'l Co. v. Teleflex, Inc.*, *ibid.*, rejected a rigid application of the "teaching, suggestion, or motivation" (TSM) test, which required a showing of some teaching, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the prior art elements in the manner claimed in the application or patent before holding the claimed subject matter to be obvious.

Further, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336, quoted with approval in *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741, 82 USPQ2d 1385, 1396 (2007).

Distinctions Over Kajimaru et al. US ‘959

The USPTO asserts that Kajimaru et al. US ‘959 discloses that acid value can be less than 8 mg KOH/g. However, Kajimaru et al. discloses that “if the acid value is lower than 8 mg KOH/g, the polyester resin becomes difficult to be dispersed in an aqueous medium and an even aqueous dispersion is made difficult to obtain and consequently, the aqueous dispersion tends to be deteriorated in a storage stability....” (*See column 5, lines 10 to 14 at of Kajimaru et al. US Patent 6,818,699.*)

Accordingly, it is submitted that a person having ordinary skill in the art would find no reason or rationale in the cited Kajimaru et al. references to use polyesters having such a low acid value of less than 8.0 mg KOH/g.

Further, it is submitted that the production method of a polyester resin aqueous dispersion is different between Kajimaru et al. and the present invention as claimed, which prevents the cited Kajimaru et al. reference from being able to either anticipate or render the instant invention obvious.

In the present invention, the production method of the polyester resin aqueous dispersion is a phase-inversion emulsification that takes place through 2 steps:

- (1) dissolving a polyester resin in an organic solvent, and

(2) dispersing the solution of the polyester resin in the organic solvent together with a basic compound in water (phase-inversion emulsification). *(See page 23, line 20 to page 24, line 6, of the present specification, which is reproduced below for the Examiner's convenience.)*

The process for producing the aqueous dispersion according to the present invention substantially comprises two steps: a dissolving step and a phase-inversion emulsification step, and may include a solvent removal step if necessary. The dissolving step is a step of dissolving a polyester resin in an organic solvent, and the phase-inversion emulsification step is a step of dispersing the solution of the polyester resin in the organic solvent together with a basic compound in water. The solvent removal step is a step of removing part or all of the organic solvent used in the polyester-resin dissolving step from the obtained aqueous dispersion to outside.

In contrast, in Kajimaru et al., the production method of the polyester resin aqueous dispersion is through a so called “self-emulsification”) and is through 2 steps:

- (1) a step of producing an aqueous dispersion A with the organic solvent content of 0.5% by mass or higher at first by collectively adding polyester resin and a basic compound to an aqueous medium to make them aqueous, and
- (2) a step of removing the organic solvent from the aqueous dispersion A (see line 56 to line 65 in column 8).

While the USPTO may assert that Kajimaru et al. “...also discloses that acid value can be less than 8 mg - see [0032], page 3...”, it is submitted that in actuality Kajimaru et al. never discloses such a matter as alleged by the USPTO. Instead, as pointed out above, Kajimaru et al. simply uses a “self-emulsification” process.

Notably, a self-emulsification method *can not* emulsify such a polyester resin as is used in the present invention. However, in the case of such a polyester resin having a high molecular weight and a low acid value as in the present invention, emulsification *can be* made by using phase-inversion emulsification (as recited in the instant claims).

Distinctions Over Uno et al. EP '122

It is submitted that the polyester resin (A) of the instant invention has a trimellitic acid component or a trimellitic anhydride component at the end of polyester chain because polyester is decomposed by trimellitic acid and trimellitic anhydride.

In contrast, the polyester resin of Uno et al. has a hydroxyl group at a terminal and performs the ring opening reaction of an acid anhydride having a C4-20 alkyl group or a C4-20 alkenyl group at the end of polyester chain (see [0021]).

Accordingly, the polyester resin of Uno et al. has an acid anhydride having a C4-20 alkyl group or a C4-20 alkenyl group at the end of polyester chain.

Trimellitic acid in Uno et al. is used as an acid component constituting a main chain of polyester (see [0027]), not existing at the end of the polyester chain. The end component of polyester chain of Uno et al. is the one derived from the acid anhydride having a C4-20 alkyl group or a C4-20 alkenyl group as above mentioned.

It is essential in Uno et al. that the polyester resin of Uno et al. has an acid anhydride having a C4-C20 alkenyl group at the end of polyester chain.

The USPTO contends that the Uno et al. composition contains polyester resin particles with particle size in a range from 100 nm to 10 micron (see [0052], page 7). However, the particle size in the Uno et al. Examples is 1.9 micron (Example 1), 70 micron (Example 2), and

5.6 micron (Example 3).

For the first time, when a polyester having a structure as above mentioned and having an acid value of 2 mg KOH/g or more and less than 7.9 mg KOH/g, and a number-average molecular weight of 1,1000 to 18,300 is contained in a polyester resin dispersion as specified in Claim 1 of the present invention, the advantageous effects of the present invention can be obtained.

Uno et al. uses the polyesters having an acid value (AV) of 5.5 to 11.4 mg KOH/g in its Comparative Examples (Comparative Example 1: AV=8.5, Comparative Example 2: AV=5.5, Comparative Example 3: AV=7.2, Comparative Example 5: AV=11.4, Comparative Example 6: AV=11.4). However, in its Examples Uno et al. use polyester resins having an acid (AV) value of 13 mg KOH/g or more (Example 1: AV=13.9, Example 2: AV=13.9, Example 3: AV=13.4, and Example 4: AV=17.7). Uno et al. describes that "...the acid value is preferably within a range from 5 to 100 mg KOH/g."

As such, it is submitted that a person having ordinary skill in the art is provided with no reason or rationale to use polyesters having such a low acid value as 5.5 to 11.4 mg KOH/g as are used in the Comparative Examples of Uno et al. Any contrary contentions of the USPTO on this point must be reconsidered.

Consequently, based on the above considerations, it is clear that the cited art references of Kajimaru et al. and Uno et al. are incapable of either anticipating or rendering obvious the instant invention as recited in pending claims 1-2 and 6-10, since each of the cited art references fail to provide for and/or each of the limitations as recited in the pending claims, and furthermore provide no disclosure that would provide a person having ordinary skill in the art with a reason or rationale to arrive at the instant invention as claimed.

Any contentions of the USPTO to the contrary must be reconsidered at present.

CONCLUSION

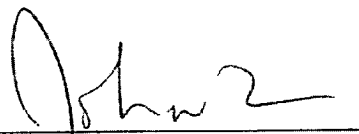
Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of pending claims 1-2 and 6-10 are allowed and patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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